JPAB

CLIPPEDIMAGE= JP403292578A
PAT-NO: JP403292578A
DOCUMENT-IDENTIFIER: JP 03292578 A
TITLE: FINGERPRINT READING DEVICE
PUBN-DATE: December 24, 1991
INVENTOR-INFORMATION:
NAME
KAWASAKI, KOJI
ASSIGNEE-INFORMATION:
NAME                                              COUNTRY
NIPPONDENSO CO LTD                                N/A
APPL-NO: JP02096697
APPL-DATE: April 11, 1990
INT-CL_(IPC): G06K009/00; A61B005/117 ; G06F015/64
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To obtain a fingerprint picture faithful to an actual
fingerprint by
providing an optical correcting member to correct a component
parallel to the
optical axis of the whole optical path length from a fingerprint
detecting
plane to the main point of a lens so as to be approximately equal
to the
optical path length on the optical axis between a fingerprint
detecting member
and the lens.

CONSTITUTION: A correcting prism 8 makes all the light reflected
at the any
spot of a fingerprint detecting plane 2 trace equal distance and
reach a main
point K of the front side of a lens 11. All the light reflected
at the
fingerprint plane 2 reaches the main point K of the lens 11 with
equal optical
path length with passing through the correcting prism 8.
Accordingly, actual
fingerprints on the fingerprint detecting plane 2 are
image-formed as a
fingerprint picture on a CCD light receiving plane 12 at an equal
magnification
without relation with parts and the generation of magnification
difference in
the fingerprint picture is prevented. Thus, the fingerprint

picture faithful
to the actual fingerprints can be obtained.

COPYRIGHT: (C)1991,JPO&Japio

JPAB

CLIPPEDIMAGE= JP403246693A
PAT-NO:  JP403246693A
DOCUMENT-IDENTIFIER:  JP 03246693 A
TITLE:  INPUT DEVICE FOR FINGER PRINT INFORMATION
PUBN-DATE: November 5, 1991
INVENTOR-INFORMATION:
NAME
HANARI, ATSUSHI
HIGUCHI, YOSHINORI
ASSIGNEE-INFORMATION:
NAME                                          COUNTRY
TOSHIBA CORP                                  N/A
APPL-NO:  JP02042438
APPL-DATE: February 26, 1990
INT-CL_(IPC): G06K009/00; A61B005/117 ; G06F015/64
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To find out one-dimensional finger print information
without requiring
complicate signal processing by converging reflected light from a
transparent
surface on which a finger impressed in one direction and
detecting the
converged light by an optical sensor.

CONSTITUTION: The finger-impressed face of a transparent body 11
is irradiated
with light projected from a light source 13.  Since the light is
dispersed on
the projected parts of the finger print and reflected on the
recessed parts, a
finger image signal can be obtained from the reflected light as
two-dimensional
information.  The reflected light is linearly converged in the
longitudinal
direction of the finger by an optical element such as a
cylindrical lens 15,
the optical addition of the finger print information is executed
and the finger
print information is obtained by the one-dimensional optical
sensor 16 as an
electric signal.  Consequently, a signal similar to a signal
obtained by adding
a signal to a finger print signal obtained as two-dimensional
image information

and forming an one-dimensional signal can be more simply obtained.

JPAB

CLIPPEDIMAGE= JP402188888A
PAT-NO:  JP402188888A
DOCUMENT-IDENTIFIER:  JP 02188888 A
TITLE:  FINGERPRINT IMAGE INPUT DEVICE
PUBN-DATE: July 24, 1990
INVENTOR-INFORMATION:
NAME
IGAKI, SEIGO
NIIZAKI, TAKU
YAMAGISHI, FUMIO
IKEDA, HIROYUKI
ASSIGNEE-INFORMATION:
NAME                                          COUNTRY
FUJITSU LTD                                    N/A
APPL-NO:  JP01008117
APPL-DATE: January 17, 1989
INT-CL_(IPC): G06K009/00; G06F015/64 ; A61B005/117
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To improve a fingerprint collating rate by arranging a
projecting part
having a prescribed height on the whole surface of a
fingerprinting part at
finer pitches than that of the image resolution of a picture
detecting part.

CONSTITUTION: On the whole surface of a fingerprinting part 10a
of a
transparent substrate 10 constituting a fingerprint image input
device,
unevenness obtained by arranging projecting parts 10b, which are
lower than the
height from the trough line of the finger-print peak line, at the
finer pitches
than that of the image resolution of an image sensor 4 is formed.
 Thus even
when the pressure of a specimen to push a fingerprinting surface,
namely the
pressure of a finger, is weak, the finger easily makes contact
with the tip
part of the projecting part, since the projecting part thrust a
fingerprint
surface, especially a fluid layer such as the sweat and grease of
the peak line
part, the disconnection or omission of the peak line pattern can

be linked, and
the unclear part of the fingerprint pattern can be eliminated.
On the other
hand, the picture signal smaller than the image resolution of the
image sensor
is not sensed.  Thus the fingerprint collating rate can be
increased.

JPAB

CLIPPEDIMAGE= JP403095693A
PAT-NO:  JP403095693A
DOCUMENT-IDENTIFIER:  JP 03095693 A
TITLE:  FINGER PICTURE INPUT DEVICE
PUBN-DATE: April 22, 1991
INVENTOR-INFORMATION:
NAME
UCHIDA, SATOSHI
TAKEDA, MASAHIRO
MATSUNAMI, TOKUMI
ASSIGNEE-INFORMATION:

| NAME | COUNTRY |
|---|---|
| TOSHIBA CORP | N/A |
| TOSHIBA INTELIGENT TECHNOL LTD | N/A |

APPL-NO:  JP01233444
APPL-DATE: September 8, 1989
INT-CL_(IPC): G06K009/00; A61B005/117 ; G06F015/64
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To uniformly illuminate a whole finger, and to obtain
clear finger
picture by constituting a luminous body of a fluorescent lamp
extending along
the longitudinal direction of the finger placed on a finger
placing surface.

CONSTITUTION: When the lower part of the finger is brought into
contact with
the finger placing surface A of an optical prism 12, light from
the luminous
body 13 is total-reflected at a part not in contact with the
finger F in the
finger placing surface A, and is diffused-reflected at the part
in contact with
the finger, and is outputted from the surface C of the prism 12,
and is
image-picked up by a television camera 14.  In this case, since a
luminous body
13 consisting of the fluorescent lamp extending along the
longitudinal
direction of the finger F is arranged in the longitudinal
direction of the
finger F, the whole finger F is illuminated uniformly without
unevenness by the
light from the luminous body 13.

JPAB

ABSTRACT:
PURPOSE: To decrease an aberration caused by a difference of a
generated wave
front of a hologram and a reproduced wave front, and a difference
of as aspect
ratio of an image, by making a distance of a body to be inspected
and the
hologram approach at the time of reproducing the hologram.

CONSTITUTION: Uneven surface information is obtained by using an
uneven surface
information detecting device which has been provided with a
transparent plate
10 against which an uneven surface is pressed, a light source 11
for
illuminating this uneven surface, a hologram 12, and a detector
13.  This
detecting device is constituted so that a beam which has been
scattered by an
uneven body to be inspected, which has been pressed against the
transparent
plate 10 is led directly to the hologram 12, and a projecting
part information
beam for satisfying a Bragg condition of the hologram 12 is led
to the
detector, but a beam from a recessed part and other beam from a

projecting part
are not led to the detector 13.

JPAB

CLIPPEDIMAGE= JP402133892A
PAT-NO: JP402133892A
DOCUMENT-IDENTIFIER: JP 02133892 A
TITLE: FINGERPRINT IMAGE INPUT DEVICE
PUBN-DATE: May 23, 1990
INVENTOR-INFORMATION:
NAME
KATO, MASAYUKI
NIIZAKI, TAKU
IGAKI, SEIGO
YAMAGISHI, FUMIO
IKEDA, HIROYUKI
ASSIGNEE-INFORMATION:
NAME                                              COUNTRY
FUJITSU LTD                                       N/A
APPL-NO: JP63286792
APPL-DATE: November 15, 1988
INT-CL (IPC): G06K009/00; A61B005/117 ; G06F015/64
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To contrive the simplification and the light weight of a
fingerprint
input device by using in common an illumination light source of a
fingerprint
image input system and a beam spot use light source of a live
body detecting
system.

CONSTITUTION: A semiconductor laser is used as a light source 31,
a grating
lens 30 is formed in a part 11a formed by cutting obliquely a
transparent light
guiding plate 11, and in a divergent light $L_i$ which is
made incident,
a '0'-order transmission light $L_0$ illuminates widely the
whole finger
10 as a divergent wave, and a primary diffracted light
$L_1$ becomes a
convergent wave and brings a part of the finger to spot
illumination. Also, in
order to form a fingerprint image on a CCD 24, a component
propagated through
the inside of the light guiding plate 11 by a total reflection in
a scattered
light of a fingerprint contact is fetched from an end face 11b

which is cut
obliquely, and led to an image forming system 22.  Subsequently, a spot image
is formed on a photodetector 27 through a convergent lens system 29, and by
detecting a size and a center position of the spot image, a live body detection
is executed.  In such a way, a live body detection use illuminating system can
be constituted without being accompanied with an increase of volume and weight.

JPAB

CLIPPEDIMAGE= JP361145686A
PAT-NO: JP361145686A
DOCUMENT-IDENTIFIER: JP 61145686 A
TITLE: FINGERPRINT PICTURE IDENTIFYING SYSTEM
PUBN-DATE: July 3, 1986
INVENTOR-INFORMATION:
NAME
SASAGAWA, KOICHI
·MIZUKURA, ISAO
ASSIGNEE-INFORMATION:
NAME                                              COUNTRY
MITSUBISHI ELECTRIC CORP                          N/A
APPL-NO: JP59267671
APPL-DATE: December 19, 1984
INT-CL_(IPC): G06K009/00
US-CL-CURRENT: 382/127

ABSTRACT:
PURPOSE: To fetch always a clear picture having good contrast by
discriminating
the presence and the absence of the contrast of the obtained
fingerprint
picture and installing a discriminating display device which
informs a tested
person.

CONSTITUTION: The automatic discriminating device 9 automatically
discriminates
whether or not based upon the density distribution of the picture
obtained from
a converting device 4, when a finger 2 is placed at the slope 3b
of a
rectangular prism, the fingerprint picture is fetched into a
processing device
5. In the initial condition when the finger 2 is not placed on
the slope 3b,
the LED-10a of a display device 1 lights up and accelerates the
tested person
to place his finger 2. Next, when the finger 2 is placed, a
LED-10b flickers,
and the tested person awaits that the surface of the finger goes
to be moist.
Further, when the adhesion between the finger 2 and the slope 3b
is increased,
the uneven pattern of a clear fingerprint having good contrast is
obtained. At

such a time, it is informed that the fingerprint picture is fetched into the
processing device 5, a LED-10c lights up, the clear fingerprint picture is
obtained and fetched into the device 5.

JPAB

CLIPPEDIMAGE= JP361221883A
PAT-NO:  JP361221883A
DOCUMENT-IDENTIFIER:  JP 61221883 A
TITLE:  METHOD AND DEVICE FOR PERSONAL COLLATION
PUBN-DATE: October 2, 1986
INVENTOR-INFORMATION:
NAME
IGAKI, SEIGO
EGUCHI, SHIN
YAHAGI, HIRONORI
YAMAGISHI, FUMIO
IKEDA, HIROYUKI
INAGAKI, YUSHI
ASSIGNEE-INFORMATION:
NAME                                          COUNTRY
FUJITSU LTD                                    N/A
APPL-NO:  JP60059801
APPL-DATE: March 25, 1985
INT-CL_(IPC): G06K009/00
US-CL-CURRENT: 382/124,382/126 ,382/127

ABSTRACT:
PURPOSE: To prevent the misuse of a personal collation system
through a subject
by collating the personal information supplied via an input means
for personal
information with the personal information stored previously in an
information
collating dictionary through an information collating means after
confirming
that the subject is equal to a living body.

CONSTITUTION: A living body detecting means 4 consists of a
living body
detecting optical system containing the short and long wavelength
optical
sensors 41 and 42, a comparison voltage generating circuit 43
which produces
automatically the comparison voltage corresponding to the output
voltage of the
sensor 42, a living body discriminating comparator 44 with
compares the
comparison voltage with the output voltage of the sensor 41 and a
touch
detecting comparator 45 which detects a contact between a finger
12 and the

sensor 42.  Here a fact that a subject is a living body is confirmed by the
means 4 utilizing the pressure dependance showing that the reflection factore
has a big change with pressure of the finger 12 in a &le;580nm visible light
area which is proper to the human skin.  Then a fingerprint supplied from a
fingerprint sensor 1 is collated with a fingerprint stored previously in an
information collating dictionary 2.

| | Document ID | Issue Date | Pages | Title | Current OR | Current XRef |
|---|---|---|---|---|---|---|
| 1 | US 5233404 A | 1993 0803 | 7 | Optical scanning and recording apparatus for fingerprints | 356/71 | 250/227.19 ; 382/127 |
| 2 | US 5177435 A | 1993 0105 | | IC test equipment | 324/755 | |
| 3 | US 5051576 A | 1991 0924 | | Finger surface image enhancement having a liquid layer on the finger<br><br>touching surface of the platen | 250/227.11 | 250/227.31 ; 356/71 |
| 4 | US 4688995 A | 1987 0825 | | Propeller module for an aero gas turbine engine | 416/127 | 416/129 |
| 5 | US 4681435 A | 1987 0721 | | Contact pattern observation apparatus | 356/71 | 396/15 |
| 6 | US 4340300 A | 1982 0720 | | Input sensor unit for a fingerprint identification system | 356/71 | |
| 7 | US 4135147 A | 1979 0116 | | Minutiae pattern matcher | 382/125 | 382/209 |
| 8 | US 4120585 A | 1978 1017 | | Fingerprint identification system using a pliable optical prism | 356/71 | 359/831 |
| 9 | US 3975711 A | 1976 0817 | | Real time fingerprint recording terminal | 382/126 | 250/550 ; 355/40 ; 356/71 ; 359/831 ; 382/127 ; 382/321 |

|   | Type | Hits | Search Text | DBs |
|---|------|------|-------------|-----|
| 1 | BRS | 81890 | prism$2 | USPAT; EPO; JPO; Derwent; IBM TDB |
| 2 | BRS | 113 | 382/127.ccls. and prism$2 | USPAT; EPO; JPO; Derwent; IBM TDB |
| 3 | BRS | 180 | 382/127.ccls. | USPAT; EPO; JPO; Derwent; IBM TDB |

**CLASS 356 Subclass Definition ⬛**

Subject matter under the class definition for the analysis of intrinsic properties of documents which includes a support for the document to be tested and means to examine and compare visually or to examine photoelectrically the properties of the document by means of visible light for the conformance of any given property with a standard or for the conformance of the pattern or writing generally with a standard pattern or writing as to form or configuration.

**(1)** **Note.** A document for this subclass is a sheetlike article and may be an information document having writing or printing or containing a pattern. A document is, however, excluded from this subclass when any writing, printing, or pattern contained on the document is examined for the information it conveys.

**(2)** **Note.** The analysis of the intrinsic properties of a document by means of radiant energy (nonvisible light), is classified in Class ⬛ Radiant Energy.

**(3)** **Note.** The analyzing of coded cards, having perforations, magnetic markings and visible markings, one at a time in business machines as well as the cards, per se, are in Class ⬛ Registers.

**(4)** **Note.** Termatrix Systems (peekaboos) are found in Class ⬛ Registers, subclass ⬛ Class ⬛ Radiant Energy, subclasses ⬛ and ⬛ Also see Class ⬛ Photocopying, for projectors involving peekaboo systems.

## SEARCH THIS CLASS, SUBCLASS :

**2,** for contour plotting apparatus involving stereoscopic images of topographical maps.

**389,** for mensuration or configuration comparison generally where a photograph is taken of the standard or object to be compared.

**391,** for configuration comparison generally of an article with a standard where light projection is involved.

**394,** for configuration comparison generally of an article with a desired shape.

### SEARCH CLASS:

**73,** Measuring and Testing, subclass ⬛ for statistical record verifying of punched or marked cards.

**194,** Check-Actuated Control Mechanisms, subclass ⬛ for the testing of currency for genuineness combined with a check controlled machine.

**209,** Classifying, Separating, and Assorting Solids, subclasses ⬛ ⬛ and ⬛ for one or more tests involving documents for length, width, thickness, color, light transmission tests and pattern analysis where a physical separation of a document from other

documents is based upon one or more of these tests.

235,   Registers, subclasses 375 for systems controlled by a record, subclasses 435 for the analysis or recognition of a coded document which does not include reading or sensing of alphanumeric characters or pattern recognition.

250,   Radiant Energy, subclasses 556 and 233 for the light detection of patterns on documents and the light detection units, per se, which involve rotating masks and shutters and subclass 271 for coded record recorders responsive to invisible radiation or invisible radiation modified by the code. See also ( 4 ) Note above.

340,   Communications: Electrical, subclass 146.2 for the comparison electrically of information where not elsewhere classified.

382,   Image Analysis, subclasses 119 and 124 for signature and fingerprint analysis which include information contents.

## CLASS 382 Subclass Definition 127

With a prism:

Subject matter under subclass 124 wherein a prism is used as part of an imaging system* so as to acquire an image of the fingerprint for identification.

(1)     **Note.**    Included are systems where the fingerprint is directly applied to the prism for pickup by the imaging system*.